**PSI Energy, Inc. d/b/a Duke Energy Indiana, Inc. ("Duke Indiana") Responses to Indiana Utility Regulatory Commission's April 12, 2006 EPAct 2005 Data Requests**

## I. Fuel Sources

**1) Do the Indiana Integrated Resource Plan and Certificate of Need processes provide for a sufficient method to insure that utilities develop a plan to minimize dependence on one fuel source? Please explain.**

Response: The goal of the Integrated Resource Plan ("IRP") and certificate of public convenience and necessity ("CPCN") processes is to determine the portfolio of demand-side and supply-side resources that will cost-effectively and reliably meet customer electricity service needs. These processes require the utility to take into account a variety of resources, including resources with different fuel sources and renewable energy technologies. However, minimizing dependence on one fuel source without regard to the economics of alternative sources and technologies is not and should not be the objective. Rather, as a component of prudent planning, utilities should utilize IRP sensitivity and scenario analyses to assess a range of outcomes that could result from the fuel source choices and technologies in the plans considered. The current IRP and CPCN processes are sufficient to allow the Indiana Utility Regulatory Commission ("Commission") to consider a variety of fuel sources and technology options, including diversity of demand-side and supply-side resources. For example, IC 8-1-8.5-3 requires the Commission to consider "the optimal extent, size, mix and general location of generation plants", and, in acting on an application for a CPCN, the Commission is required by IC 8-1-8.5-4 to take into account "other methods for providing reliable, efficient and economical electric service, including the refurbishment of existing facilities, conservation, load management, cogeneration and renewable energy sources." (Emphasis added.) In addition, the state utility forecasting group established under IC 8-1-8.5-3.5 has considered renewable energy sources in its report.

**2) How could the IURC best ensure that the electric energy sold to consumers is generated using a diverse range of fuels and technologies, including renewable technologies?**

Response: Both the CPCN statute and the IRP rules require utilities to consider renewable energy resources. The IRP rules also require utilities to demonstrate that the resource plan incorporates a workable strategy for reacting to unexpected changes, which could include changes in fuel costs. Through these existing processes, the IURC can ensure that the utility considers fuel diversity and the use of renewables in its analyses, while keeping the objectives of cost and reliability in mind. Additionally, the Utility Generation and Clean Coal Technology statute (*i.e.,* Senate Bill 29) also provides incentives for utilities to consider alternative fuel sources, such as renewable energy or integrated gasification combined cycle alternatives.

**3) Is the requirement of IC 8-1-2-42(d)(1) compatible with a requirement to ensure the electric energy a utility sells to consumers is generated using a diverse range of fuels and technologies, including renewable**

**technologies? Would summary FAC proceedings provide for timely review if such a requirement were implemented? Please explain.**

Response: IC 8-1-2-42(d)(1) provides that “the electric utility has made every reasonable effort to acquire fuel and generate or purchase power or both so as to provide electricity to its retail customers at the lowest fuel cost reasonably possible...” A regulation that mandates utilities to produce a certain percentage of power based upon the fuel source, rather than the lowest cost reasonably possible, would not be consistent with IC 8-1-2-42(d)(1). In addition, any such requirement would complicate the summary nature of fuel adjustment proceedings as utilities sought to prove compliance with the dispatch requirements from alternative fuel sources while at the same time establishing compliance with economic dispatch. On the other hand, the existing fuel adjustment provisions do not preclude the use of alternative fuels or renewable energy alternatives, and may encourage the use of such resources provided such resources meet the criteria for economic dispatch.

Duke Indiana believes that if using a diversity of fuels is mandated without regard to economic dispatch of available capacity, the cost to consumers could be higher than it should be and a primary goal of the fuel clause may be violated. In general, the fuel adjustment provisions are concerned with the cost of fuels utilized, given the mix of generating resources the utility already possesses, while the IRP and CPCN processes consider the broader context of capital and O&M costs, as well as reliability, environmental impacts and other public policy considerations. In order to encourage fuel diversity, the total economic picture of alternative fuel resources should be considered in the IRP and CPCN processes, as discussed above.

4) **Does today’s energy market environment provide sufficient incentive for utilities to diversify their fuel sources? Please explain.**

Response: In today’s Midwest ISO Day Two energy market, electric energy is made available to power purchasers from numerous sources based upon competitive bidding and locational marginal pricing. Suppliers are motivated to produce power based on economic dispatch. The increased access to transmission systems as a result of the Midwest ISO Day Two energy markets and the energy markets of other regional transmission organizations (“RTOs”) may encourage the development of alternative fuel sources, such as wind or geothermal power developments, which are only suitable for development in certain locations. The availability of tax credits also provides an incentive to develop such power sources. To the extent that alternative fuel resources, including renewable energy technologies, meet reliability, safety and environmental standards, and afford low cost generation of power, these alternative resources and renewable technologies should be considered and developed by utilities or other power suppliers.

## II. Fossil Fuel Generation Efficiency

**1) What, if any, specific plans has your utility put in place to drive increased fossil fuel generation efficiency? How do these plans differ from what was done in the past? How do you expect these plans to change over the next ten years?**

Response: As recognized by the IURC staff in its white paper, any plans to increase fossil fuel generation efficiency must be viewed in light of regulatory requirements, specifically the EPA's new source review ("NSR") rules. These regulatory requirements are subject to interpretation and change over the years. Within the context of such requirements, Duke Indiana has planned several routine maintenance projects, which may maintain or increase the efficiency of its generating units. Specifically, Duke Indiana's Cayuga and Gibson generating station units have or are scheduled to have pollution control devices installed due to EPA and State emission reduction requirements. Such devices consume auxiliary power which lowers the overall efficiency of the generating units. Therefore, Duke Indiana has plans to implement advancements in steam turbine technology and materials at the generating units over the next several years, which may mitigate some of the efficiency loss due to pollution control equipment installations. Additionally, projects that will maintain or improve efficiency are scheduled, such as replacing and repairing vacuum and water pumps, refurbishing coal pulverizers, replacing secondary air heater basket material, condenser efficiency improvements, and combustion tuning. All of these plans are subject to change depending on the changing regulatory environment and rules related to NSR.

In the past our generating unit maintenance programs primarily focused on maintaining the initial equipment design efficiency or installed capacity. Over the next ten years the continuing evolution of environmental emission control requirements, as well as general increases in fuel costs, will require us to continue to pursue advancements in equipment design and technologies to maintain and, where allowed, improve unit efficiency.

**2) Does today's energy market environment provide sufficient incentive for utilities to increase the efficiency of its fossil fuel generation? Please explain.**

Response: Since the operating efficiency of a power plant is a critical component of the cost of producing electricity, and generally the most efficient, least cost units are dispatched ahead of less efficient units, utilities have an economic incentive to maintain and improve the operating efficiency of their power plants, provided that the benefits of increased efficiency and lower operating costs outweigh the capital and other costs necessary to achieve the improved efficiency. As pointed out in the IURC staff position paper, "[T]he not yet fully resolved delineation of what constitutes plant modifications sufficient to trigger New Source Review requirements should also be considered in any state mandated efficiency improvements as they may add substantial costs into any cost-benefit analysis." Staff paper at page 7. The uncertainty and potential cost of NSR compliance associated with fossil fuel generation efficiency improvements may adversely impact the implementation of such improvements.

3) **Provide the historical annual operating efficiencies for the past 10-years for each of your fossil fuel generation plants and a similar cumulative value for your utility.**

Response: See table below.

| HEAT RATE (BTU/KWH) NET | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|
| **CAY 1** | 10,255 | 9,985 | 10,042 | 10,129 | 9,935 | 10,024 | 10,072 | 10,061 | 10,138 | 9,911 |
| **CAY 2** | 10,055 | 9,939 | 9,967 | 10,075 | 9,961 | 9,978 | 10,087 | 10,172 | 10,028 | 10,285 |
| **CAY 3** | 10,836 | 10,046 | 10,698 | 11,193 | 9,742 | 10,552 | 10,404 | 11,471 | 10,672 | 10,519 |
| **EDW 6-8** | 13,323 | 12,995 | 13,525 | 13,687 | 13,720 | 14,241 | 14,368 | 15,316 | 14,618 | 15,215 |
| **GAL 1** | 10,747 | 10,746 | 10,805 | 10,841 | 10,768 | 10,817 | 11,014 | 10,919 | 10,963 | 10,980 |
| **GAL 2** | 10,747 | 10,746 | 10,844 | 10,700 | 10,633 | 10,822 | 10,961 | 10,796 | 10,778 | 11,030 |
| **GAL 3** | 10,747 | 10,746 | 10,778 | 10,558 | 10,635 | 10,848 | 10,909 | 10,641 | 10,865 | 11,032 |
| **GAL 4** | 10,747 | 10,746 | 10,809 | 10,593 | 10,410 | 10,587 | 10,841 | 11,035 | 10,679 | 10,883 |
| **GIB 1** | 9,900 | 10,147 | 9,889 | 9,704 | 9,812 | 9,818 | 9,892 | 9,953 | 9,946 | 9,659 |
| **GIB 2** | 9,746 | 10,006 | 10,040 | 9,865 | 9,887 | 9,862 | 10,041 | 10,118 | 10,081 | 10,160 |
| **GIB 3** | 10,024 | 10,221 | 10,086 | 9,943 | 9,879 | 9,830 | 9,942 | 9,926 | 10,045 | 9,993 |
| **GIB 4** | 9,925 | 9,878 | 9,800 | 9,825 | 9,795 | 9,841 | 10,033 | 10,031 | 9,950 | 10,120 |
| **GIB 5** | 10,223 | 10,216 | 10,232 | 9,854 | 9,858 | 9,951 | 10,072 | 10,289 | 10,264 | 10,302 |
| **NOB 1-2** | 13,200 | 13,192 | 13,062 | 13,286 | 12,683 | 12,667 | 12,922 | 11,769 | N/A | N/A |
| **WAB 2** | 11,313 | 11,270 | 11,281 | 11,090 | 11,117 | 10,906 | 11,067 | 11,024 | 11,362 | 11,275 |
| **WAB 3** | 11,113 | 11,216 | 10,805 | 10,803 | 10,513 | 10,502 | 10,451 | 10,437 | 10,416 | 10,347 |
| **WAB 4** | 10,226 | 10,976 | 10,438 | 10,590 | 11,297 | 11,231 | 10,680 | 10,735 | 10,841 | 10,762 |
| **WAB 5** | 10,964 | 10,581 | 10,565 | 10,985 | 10,148 | 10,203 | 10,156 | 10,358 | 10,436 | 10,473 |
| **WAB 6** | 10,729 | 10,903 | 10,858 | 10,503 | 10,433 | 10,346 | 10,451 | 10,425 | 10,302 | 10,377 |
| **WAB 7** | 10,489 | 9,728 | 26,180 | 10,478 | 9,190 | 11,268 | 10,208 | 11,579 | 10,496 | 10,499 |
| **CAY 4** | 11,250 | 12,574 | 12,414 | 12,201 | 12,964 | 17,988 | 14,405 | 11,476 | 11,947 | 12,333 |
| **CNN 1-2** | 38,351 | 18,117 | 14,367 | 13,782 | 13,313 | 14,186 | 23,202 | 15,289 | 0 | 40,551 |
| **HNC 1-3** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 10,865 | 10,965 | 10,245 |
| **MAD 1-8** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 12,599 | 12,479 | 13,339 |
| **MWB 1-6** | N/A | 87,693 | 33,792 | 21,138 | 28,885 | 34,576 | 0 | 0 | 0 | 0 |
| **NOB CC** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 8,944 | 8,801 | 8,623 |
| **WRR CC** | 25,809 | 22,139 | 11,315 | 10,647 | 8,746 | 9,244 | 8,958 | 8,317 | 9,319 | 8,930 |
| **MAR 1-3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **WHT 1-4** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 12,057 |
| **Cayuga** | 10,164 | 9,962 | 10,011 | 10,099 | 9,947 | 10,001 | 10,079 | 10,115 | 10,084 | 10,117 |
| **Edwardsport** | 13,323 | 12,995 | 13,525 | 13,687 | 13,720 | 14,241 | 14,368 | 15,316 | 14,618 | 15,215 |
| **Gallagher** | 10,747 | 10,746 | 10,809 | 10,677 | 10,613 | 10,771 | 10,929 | 10,847 | 10,816 | 10,978 |
| **Gibson** | 9,966 | 10,092 | 10,009 | 9,837 | 9,845 | 9,861 | 10,002 | 10,064 | 10,049 | 10,064 |
| **Noblesville Steam** | 13,200 | 13,192 | 13,062 | 13,286 | 12,683 | 12,667 | 12,922 | 11,769 | N/A | N/A |
| **Wabash River** | 10,804 | 10,939 | 10,795 | 10,691 | 10,562 | 10,528 | 10,514 | 10,535 | 10,542 | 10,550 |
| **Duke Indiana Steam** | 10,222 | 10,255 | 10,243 | 10,136 | 10,101 | 10,127 | 10,221 | 10,251 | 10,239 | 10,243 |
| **Duke Indiana Peaking** | 24,015 | 21,847 | 11,415 | 10,965 | 8,971 | 9,564 | 9,042 | 8,612 | 9,478 | 10,060 |
| **Duke Indiana Thermal** | 10,339 | 10,560 | 10,288 | 10,157 | 10,068 | 10,114 | 10,173 | 10,180 | 10,224 | 10,234 |
| **Duke Indiana Total** | 10,218 | 10,420 | 10,180 | 10,058 | 9,936 | 9,988 | 10,083 | 10,088 | 10,127 | 10,139 |

## III. Smart Metering

1) **Please describe the present status of time-based metering and communications within your customer base. Include detail by customer class(e.g. residential, commercial, industrial) relating to tariff offerings, smart meters deployed, means of communicating collected data with participating customers, and capital invested in infrastructure.**

Response: Duke Indiana's current demand response programs and time-based metering tariffs are summarized below.

### A. Smart Metering Status – Tariff Options

**Non-Residential – Time Of Use Pricing**

- Standard Contract Rider 10.2 – Optional Time-of-Use Service Applicable to Rate LLF. This optional rider is available to customers served under rate LLF. Under this rider, demand (kW) and energy (kWh) charges vary between summer, spring/fall, and winter, and between on- and off-peak periods. On- and off-peak periods are defined as follows. Off-peak periods include all hours in the spring and fall, all weekends and holidays in summer and winter, hours between 8 pm and noon in the summer, and hours between 9 pm and 7 am as well as 1 pm through 6 pm in the winter. On-peak hours include summer weekdays between 12 pm and 8 pm and winter weekdays between 7 am to 1 pm and 6 pm to 9 pm. Customers must enter into a service agreement with Duke Indiana that specifies the details, rules, and regulations of the program.

- Standard Contract Rider 12.2 – Optional Time-of-Use Service Applicable to Rate HLF. This optional rider is available to customers served under rate HLF. Under this rider, demand (kW) and energy (kWh) charges vary between summer, spring/fall, and winter, and between on- and off-peak periods. The seasonal and time-of-day periods are defined as specified above for Standard Contract Rider 10.2. Customers must enter into a service agreement with Duke Indiana that specifies the details, rules, and regulations of the program.

**Non-Residential – Interruptible / Load Reduction Credits**

- Standard Contract Rider No. 19 – Non-firm Service – Applicable to Rates LLF, HLF, and Contract Rates. This voluntary rider is available to customers receiving service under rate LLF and rate HLF. A customer must be able to contract for a minimum non-firm load of 5,000 kW. In addition, a maximum of 300,000 kW can be accommodated under this rider. Customers must enter into a service agreement with Duke Indiana that specifies the details, rules, and regulations of the program.

- Standard Contract Rider No. 23 – Peak Load Management Program. This rider is available to customers receiving service under Rate LLF, Rate HLF, and Special Contracts. The PLM Program is voluntary and offers customers the opportunity to reduce their electric costs by managing their electric usage during the Company's peak load periods. Customers and the Company will enter into a service agreement under this Rider which will specify the terms and conditions under which the customer agrees to reduce usage. PowerShare® is the brand name given to the Peak Load Management Program. There are two product options offered for PowerShare® called CallOption and QuoteOption:

- CallOption – A customer being served under CallOption agrees, upon notification by the Company, to reduce its demand or provide generation for purchase by the Company. Each time the Company exercises its option under the agreement, the Company will provide the customer a credit for the energy reduced or generation provided. If available, the customer may elect to buy through the reduction at a market-based price. In addition to the energy credit, customers on the CallOption will receive a one-time option premium credit. Only customers able to provide a minimum of 100 kW load response qualify for CallOption.

- QuoteOption – Under QuoteOption, the customer and the Company agree that when the average wholesale market price for energy during the notification period is greater than a predetermined strike price, the Company may notify the customer of a QuoteOption event and provide a price quote to the customer for each event hour. The customer will then determine whether it wishes to reduce demand or provide generation during the event period. If the customer wishes to reduce demand or provide generation, the customer will notify the Company and provide the Company an estimate of the customer's projected load reduction or generation. Each time the Company exercises the option, the Company will provide the customer an energy credit. There is no option premium for the QuoteOption product since customer load reductions are voluntary. Only customers able to provide a minimum of 100 kW load response qualify for QuoteOption.

Customer communication occurs primarily through the account representatives and our website.

- Special Contracts – From time to time Duke Indiana has entered into customer-specific special contracts that provide for market-based hourly pricing or interruptible rates. Duke Indiana currently has a special contract with NUCOR that contains interruptible provisions either for reliability or for economics. In addition, Duke Indiana has three customers that operate under a special contract hourly price (Steel Dynamics, Inc., Heartland Steel/CSN and Air Liquide).

**Residential – Load Reduction Credits**

- PowerManager (Residential Direct Load Control ("DLC")). PowerManager is a voluntary program for residential customers with central air conditioning. It is a residential air conditioning, direct load control program. This is a cycling DLC program where a load management switch is installed to the central air compressor unit outside the home. The compressor unit can be cycled on and off during an event between the months of May through September. Customers may enroll in different options which pay varying installation and event incentive levels for different levels of load reduction capability. Our current offerings include:

a. Option A – 1.0 kW cycling
b. Option B – 1.5 kW cycling
c. Retention Option – not advertised – 0.5 kW cycling

Currently, Duke Indiana has installed approximately 25,000 DLC switches and we anticipate installing approximately 31,400 DLC switches by August, 2006, providing approximately 43.2 MW of peak load reduction capability.

**B. <u>Smart Meters Deployed</u>**

There are currently 628 "smart" meters installed by Duke Indiana for commercial customers. An additional 1,679 "smart" meters are installed for industrial customers by Duke Indiana. Such meters can be used in the PowerShare® and other time of use rate programs. In addition, with the installation of "smart" meters, Duke Indiana has the capability of collecting hourly usage information and providing that information to the customer.

**C. <u>Means of Communicating Meter Data</u>**

There are two ways a customer can access smart meter data. First, a customer can elect to install equipment to access usage information directly from the meter. Second, a customer can elect to participate in Duke Indiana's Enfocus® program. This web-based tool allows the customer to access their usage information through the internet. If the customer elects this option, a fee of $20 is added to the customer's monthly bill. It should be noted that although the smart meters employed by Duke Indiana currently do not permit two-way communication between the meter and Duke Indiana, Duke Indiana is exploring the feasibility of such meters.

**D. <u>Capital Invested in Time-Based Metering and Communications Infrastructure</u>**

Duke Indiana has not separately tracked its investment in time based metering and communications infrastructure. Nevertheless, a summary of Duke Indiana's O&M expenditures related to certain demand response related programs is set forth below:

PowerShare®
2003 $977,000 (includes direct & indirect)
2004 $858,000 (includes direct & indirect)
2005 $431,000 (includes only direct, indirect is not available)

PowerManager
2003 $509,000 (includes direct & indirect)
2004 $2,290,000 (includes only direct, indirect is not available)
2005 $2,729,000 (includes only direct, indirect is not available)

The Company's implementation costs for Enfocus® (the web-based tool that allows customers access to their usage information through the internet) is about $95,000.

Industrial and commercial customers electing to participate in the PowerShare® and other time of use rate programs bear the cost of the metering and communications equipment.

2) **Describe the methods utilized presently or historically to communicate tariff/program opportunities to customers. Do you have plans to enhance marketing of these opportunities? Please explain.**

Response: The communication methods utilized for tariff and program opportunities are specific to the program or tariff. Program opportunities for large commercial and industrial customers have primarily been communicated through account representatives. Less frequently, direct mail and area wide customer meetings have been used in the past for this group of customers.

Communicating program opportunities for mass market customers such as residential and small commercial customers presents a different challenge. Programs such as PowerManager rely heavily on direct mail. In the past, other programs (not just tariff offerings) have utilized bill inserts, telemarketing, and radio spots. Most programs, including PowerManager, have a web page for general program information.

In the future, the specific marketing methods used will be dependent on the program. Direct mail, email, website, telemarketing, bill inserts, and account representative contacts all could have a role.

3) **Detail any cost/benefit studies conducted for your service area regarding time-based metering communication deployment and tariffs. Detail should at a minimum include cost and demand response assumptions.**

Response: A cost/benefit study has been completed for Duke Indiana's PowerManager program. The study is performed in a software package called DSMore. DSMore is designed to evaluate demand side management programs including programs that would typically be categorized as energy efficiency, direct load control, demand management, and demand response. Standard DSM test scores are reported as results of this analysis. The most recent utility cost test score for PowerManager is 3.11, proving it to be a very cost effective option.

Duke Indiana is developing a comprehensive cost/benefit study regarding time-based metering communication deployment, also called AMI (Advanced Metering Infrastructure).

4) **Detail the response to any customer surveys you may have conducted in your service area regarding time-based metering and rates. If no surveys have been conducted, what customer input method does your utility employ to evaluate customer demand for time-based metering and rate offerings?**

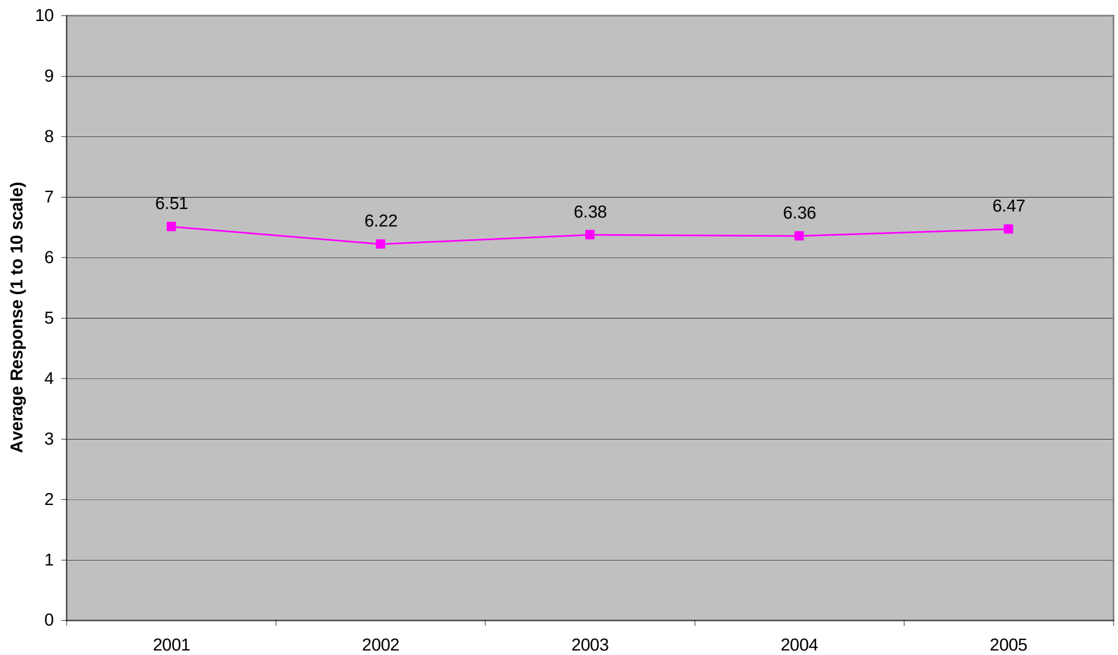
<u>Response</u>: Duke Indiana conducted specific surveys on time-based metering and rates in 1992. The study concluded that most of the participants believed in demand side management options, but did not see a time of use program as an option for their facility.

Recently, a real time pricing ("RTP") collaborative was formed as ordered by the IURC in Duke Indiana's last rate case, Cause No. 42359. This collaborative was formed to discuss solutions and alternatives to cost effectiveness problems associated with Duke Indiana's RTP program. Unfortunately, the collaborative was unable to reach consensus on a revised RTP program structure, and the RTP program was discontinued as of January 1, 2006. RTP customers were provided the opportunity to enroll in the PowerShare® program.

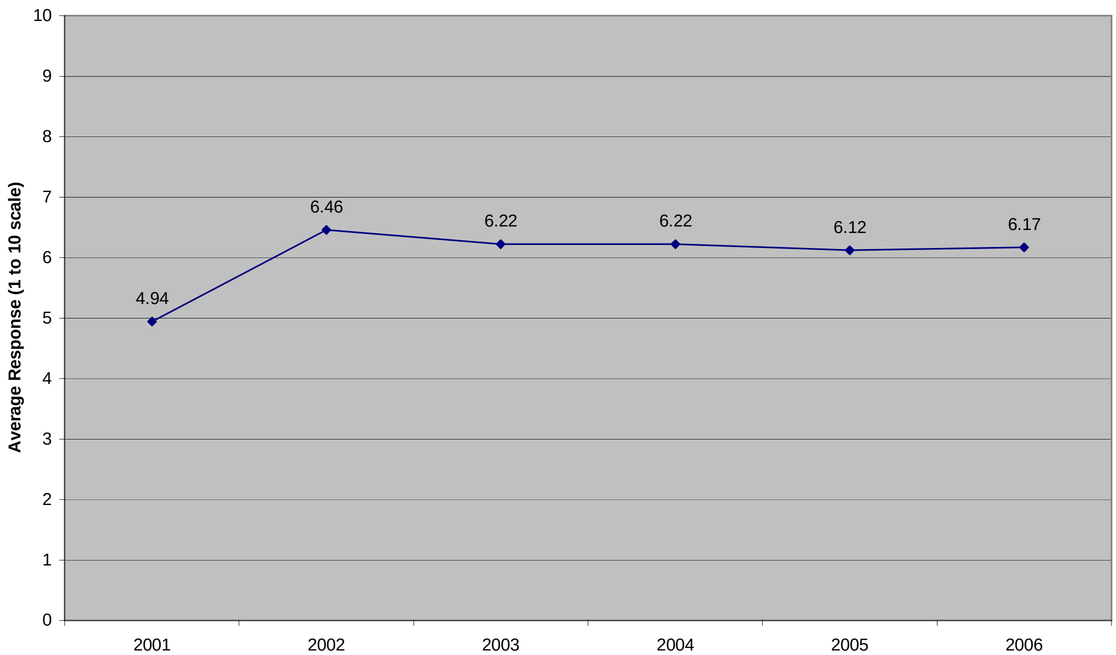
In 2005, a study on the PowerShare® CallOption program was completed. The objective of the survey was to ask customers about different attributes of the PowerShare® CallOption program and how Duke Energy could change them to make the program more appealing. The most significant conclusion of the study was that 3 groups of participants were identified. One group was primarily interested in raising the PowerShare® CallOption premium as high as possible because they have backup generation and therefore they want to maximize the value of participating. The second group was very concerned with consecutive days of requiring participants to respond with load reductions. Such customers do not have backup generation and therefore their operations are impacted directly. The third group did not particularly find any one attribute to be more appealing than the others. Having this information allowed Duke Indiana to change certain attributes of the CallOption program to increase participation and make the program more appealing to customers. Some of the improvements included increasing the strike price from .06 cents to .10 cents, increasing the premium incentive under the distributed resources option, and reducing the consecutive load reduction days from 3 days in a row with a 4 day per week maximum, to 2 days in a row with a 3 day per week maximum.

In general, for large commercial and industrial customers, account representatives regularly talk with customers to stay informed about customer demands for utility products and services. For residential and small/medium non-residential customers, Duke Indiana conducts special surveys from time to time to assess new product appeal. Further, Duke Indiana tracks customer satisfaction on a regular basis through J.D. Power and Associates. Two graphs are included below. These graphs detail customer responses to the question "How satisfied are you with the availability of pricing options that meet your needs?" While these graphs do not speak directly to any specific pricing option, movement up or down over time should indicate the satisfaction level with current options. Satisfaction has remained relatively stable over many years. This would suggest that no widespread dissatisfaction has developed over the past 5 years due to a lack of pricing options available.

**J.D. Power Satisfaction Scores - Residential**
**How Satisfied Are You with the Availability of Pricing Options That Meet Your Needs?**



**J.D. Power Satisfaction Scores - Small & Medium Businesses**
**How Satisfied Are You with the Availability of Pricing Options That Meet Your Needs?**




5) **What, if any, regulatory barriers exist which limit the expansion of time-based metering and rates?**

Response: Currently, regulatory barriers consist of eliminating for utilities the uncertainty surrounding (a) appropriate cost recovery for implementing a time-based metering system and (b) lost utility revenues resulting from increased customer utilization of time-of-use rates. It should also be noted that a cost benefit analysis should be completed prior to the implementation of any mandatory smart meter installation program and this is particularly important with respect to residential and small business customers.

6) **Can time-of-use rates be effectively implemented without the use of smart metering? Please describe any new or expansion of existing time-of-use rates your utility plans to implement in the next 24 months.**

Response: As a practical matter, the only time-of-use rate that could be implemented without a smart meter would be a monthly or seasonal rate or a direct load control program, like PowerManager. Under seasonal rates, a different rate for winter, spring, summer, and fall could be determined and applied to a customer's usage. The normal meter reading schedules would be maintained. The benefit of such a seasonal rate would be uncertain. It would not provide the demand response needed during the handful of critical peak days experienced during the year. Therefore, Duke Indiana believes that meaningful time-of-use rates could not be implemented without some form of smart metering. Duke Indiana does not currently have any plans to introduce a new or expand an existing time-of-use rate in the near term. Duke Indiana is investigating the technical and economic feasibility of broadband over powerline ("BPL") solutions, which may prove to be a useful communications technology to work with smart metering functions going forward.